

# *Conicochernes doyleae*, a new Australian Species of the Chernetidae (Pseudoscorpionida: Arachnida)

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A new species of the genus *Conicochernes* Beier, *C. doyleae*, is described from the Sydney region. It is corticolous, being associated in the sampled area specifically with the 'Brush Box', *Lophostemon confertus* (R.Br.) Peter G. Wilson et J. T. Waterhouse.

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## INTRODUCTION

The Chernetidae are the largest family of pseudoscorpions currently including nearly 100 genera and over 550 species distributed over much of the world (Harvey, 1985). Of these only 12 genera, represented by 26 species, occur in the Australian region.

The species described herein is a representative of the genus *Conicochernes* Beier which is endemic to Australia. Four species are currently known namely: *C. brevispinosus* (L. Koch), *C. crassus* Beier, *C. globosus* Beier and *C. incrassatus* (Beier).

Measurements are based on the examination of 10 specimens of each stage made in accordance with those advocated by Chamberlin (1931). Those in parentheses are the female and follow those of the male.

Abbreviations for chelal trichobothria and setal formulae follow those devised by Chamberlin (1931).

Genitalic terminology follows Legg (1974a, 1974b). All specimens are preserved in spirit.

## SYSTEMATIC DESCRIPTION CHERNETIDAE Chamberlin 1931 *Conicochernes* Beier 1948

**Type species:** *Chelifer brevispinosus* L. Koch 1885.

For synonymy list refer to Harvey 1981: 246.

## KEY TO SPECIES OF CONICOCHERNES

1. 3rd distal blade of flagellum serrate . . . . .	2
3rd distal blade of flagellum not serrate . . . . .	3
2. At least 2 galea setae, eye spots present . . . . .	<i>C. doyleae</i> sp. nov.
1 galea seta, eye spots absent . . . . .	<i>C. incrassatus</i> (Beier)
3. 3rd distal blade of flagellum pinnate . . . . .	4
All blades of flagellum pinnate . . . . .	<i>C. globosus</i> Beier
4. Serrula exterior with 16-17 lamellae . . . . .	<i>C. brevispinosus</i> (L. Koch)
Serrula exterior with 21 lamellae . . . . .	<i>C. crassus</i> Beier

*Conicochernes doyleae* sp.nov.  
(Figs 1-4)

**Etymology:** This species is named after Suzanne Doyle, a colleague who has been of great assistance to me in the field.

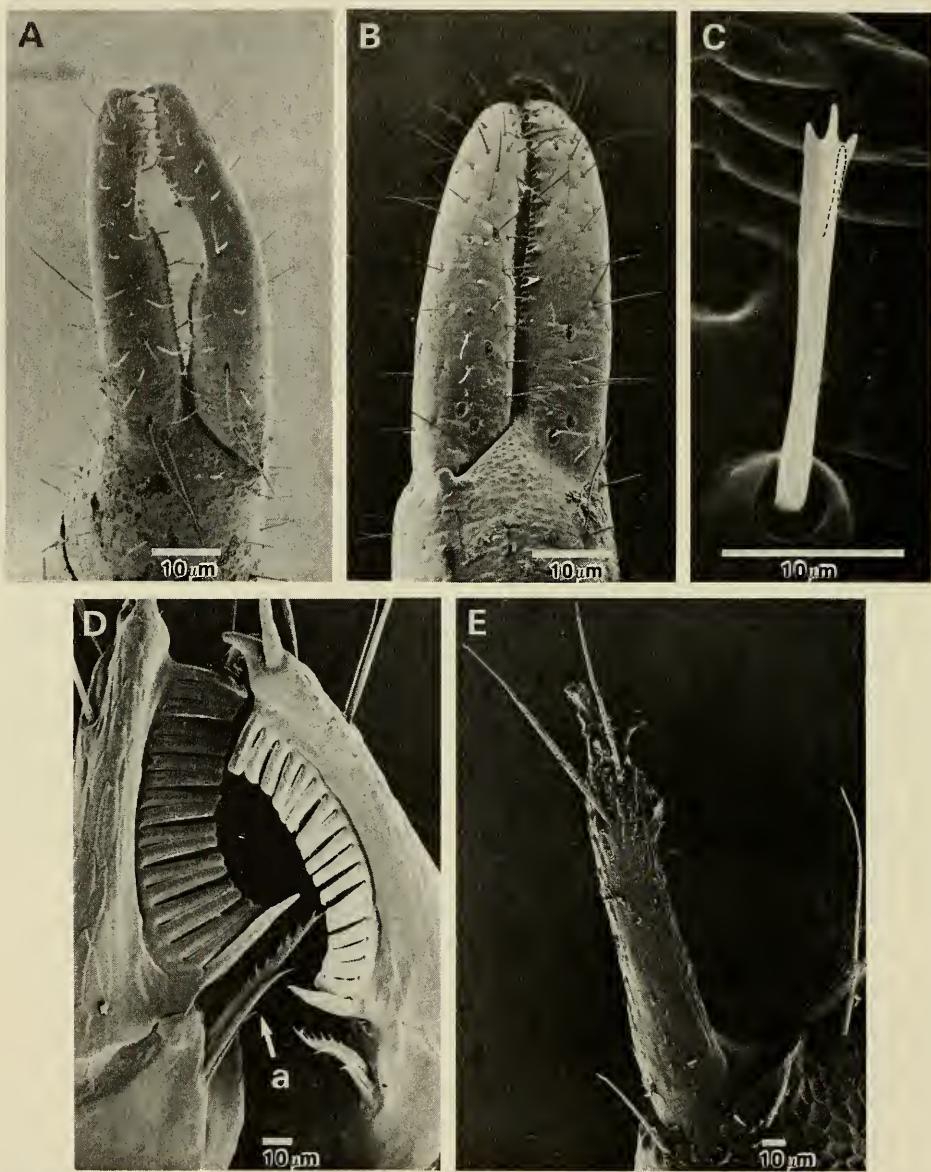


Fig. 1. *Conicochernes doyleae* sp. nov., scanning electron micrographs of paratypes: A, right chela, lateral aspect, male; B, left chela, lateral aspect, female; C, dorsal seta of tergite 4; D, serrula exterior of chelicerae, female; D, a flagellum of left chelicera; E, movable finger of left chelicera.

**Holotype:** ♀, Australian Museum, Sydney (KS 17445).

**Type locality:** Stanley Street, Chatswood, 10km NW of Sydney G.P.O., N.S.W., lat. 33°48'10"S, long. 151°11'30"E, under bark of *Lophostemon confertus* (R.Br.) Peter G. Wilson et J. T. Waterhouse, 17. iv. 1985, C. Kennedy.

**Paratypes:** same data as holotype, Australian Museum, 4♂ (KS 17446), 4♀ (KS 19207), 4 nymphs (KS 19208).

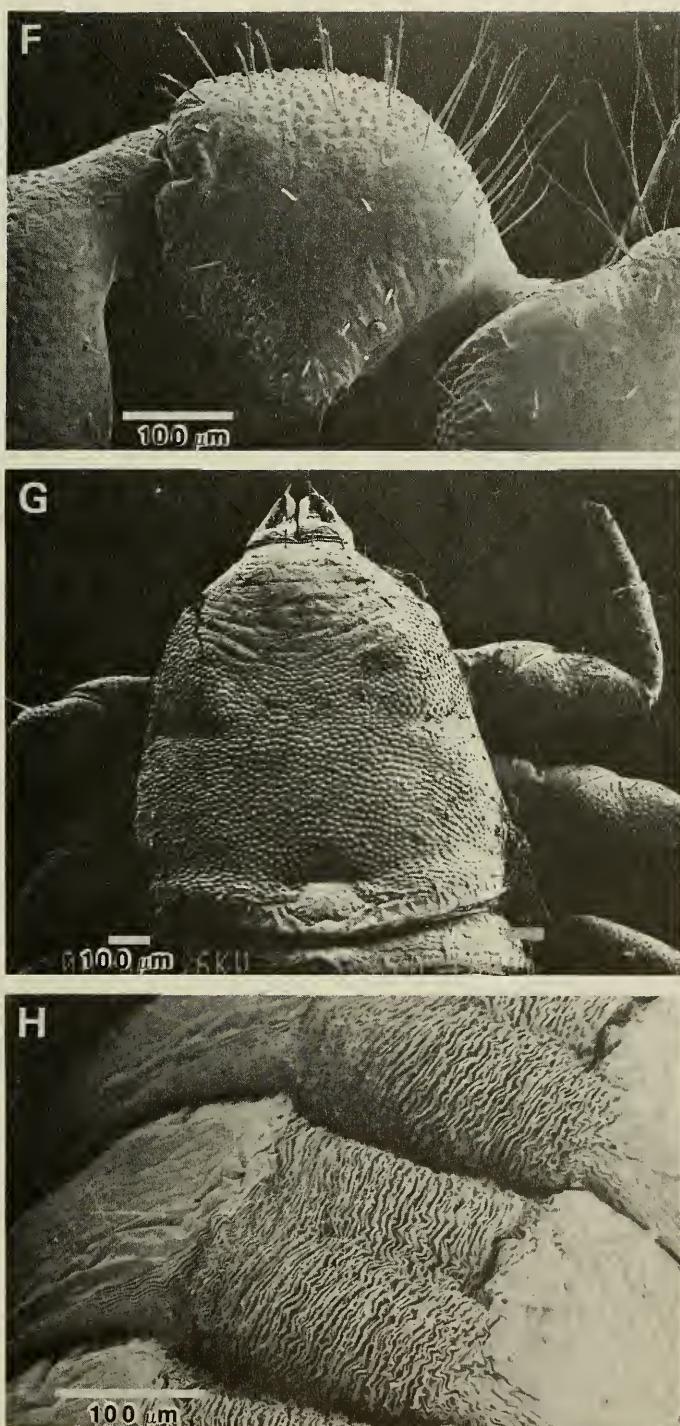


Fig. 2. *Conicochernes doyleae* sp. nov., scanning electron micrographs of female paratypes: F, trochanter of right pedipalp; G, carapace, dorsal aspect (pedipalps dissected); H, pleural membrane.

**Diagnosis:** A species of the genus *Conicochernes* with the following characters: trichobothrium *it* widely separated distally from *ist*; serrula exterior with 16-17 equidimensionally broad, blunt lamellae and a long, narrow acuminate proximal lamella; 2 galea setae present, eye spots distinct.

**Description:** Adults. Colour dark red-brown, body dorso-ventrally compressed, surface of carapace predominantly papillate; pleural membrane with closely set undulating longitudinal folds (Fig. 2H). Pedipalp stout, trochanter with gently rounded anterior margin, setae very long and acuminate proximally (Fig. 2F), elsewhere short, straight, longitudinally ribbed in upper distal third and terminating in 3-4 small denticles of different lengths (Fig. 1C); sculpture coarsely papillate; L/W ratio 1.15-1.40 ( $\sigma$ ), 1.20-1.40 ( $\varphi$ ); femur stout, anterior margin relatively straight, posterior margin well rounded proximally, abruptly pedicellate, setae short, terminally denticulate as described above, 2.75-3.00 ( $\sigma$ ), 2.56-3.00 ( $\varphi$ ); tibia stout, anterior margin gently rounded, distinctly pedicellate 1.69-2.40 ( $\sigma$ ), 1.63-2.33 ( $\varphi$ ); chela very stout, chelal hand broad proximally, narrowing distally and longer than chelal fingers, lateral margins relatively straight, chela (with pedicel) 2.93-3.44 ( $\sigma$ ), 3.02-3.44 ( $\varphi$ ), chela (without pedicel) 2.43-3.17 ( $\sigma$ ), 2.75-3.25 ( $\varphi$ )  $\times$  longer than broad. Fixed chelal finger with 8 trichobothria (Fig. 4M, N), *it* well separated distally from *ist*; movable finger with 4 trichobothria, venom tooth large; marginal teeth on each finger 40-50 contiguous, accessory teeth present; sense spots present; male chelal fingers with extensive medial gape (Fig. 1A); female chelal fingers without gape (Fig. 1B). Chelicera small with 5 setae, lamina exterior present, serrula exterior attached throughout with 18-19 ( $\sigma$ ), 17-18 ( $\varphi$ ) equal broad, blunt lamellae and a long acuminate proximal lamella (Fig. 1D); galea well developed,  $\sigma$  with 3-5 small rami,  $\varphi$  5-6 rami, in most cases 2 galea setae present (Fig. 1E); flagellum with 3 blades of unequal length, distal blade long with 8-9 small spines, approximately 3.40 $\mu$ m in length, spaced 4.0-4.70 $\mu$ m along the anterior face (Fig. 1Da). Carapace: anterior margin truncate; pars cephalica covered with transverse discontinuous ridges and corresponding furrows that may be modified by very small, transversely aligned papillae, the remaining part of carapace coarsely and densely papillate; posterior margin slightly angulate with centrally elevated disc, lateral margins slightly converging distally (Fig. 2G); setae short, terminally denticulate, 6: 10: 60-70 ( $\sigma$ ), 6: 13-14: 50-60 ( $\varphi$ ); L/W ratio 1.05-1.16 ( $\sigma$ ), 1.00-1.16 ( $\varphi$ )  $\times$  longer than broad, eye spots present. Tergites: interscutal membrane in shallow folds, setae short, terminally denticulate; chaetotaxy:  $\sigma$  12-14: 14: 14-16: 14: 16-17: 16-18: 18-20; 18-20: 17-18: 18-20: 14-16: ?;  $\varphi$  10-14: 12-15: 16-17: 16-18: 18-20: 18-20: 18-20: 18-20: 13-15: 10: ? Uniseriate. Coxal chaetotaxy:  $\sigma$  2: 3: 24-25, 0: 3: 10-12, 0: 4: 11-12, 0: 3: 10-12, 0: 3: 15-16;  $\varphi$  2: 3: 10-16, 1: 2: 7-8, 1: 2: 9, 1: 2: 7-8, 1: 2: 14-15. Male genitalia: dorsal apodemes elongate, tapering; paired lateral apodemes extend ventrally and laterally to curve upwards terminally (Fig. 3K). Chaetotaxy: anterior operculum large, posterior margin with row of 7 acuminate setae curling into genital aperture, anterior to these, a row of 9 short setae above which are 3-4 long setae forming a pyramidal effect and surrounded by 11-12 very short setae; posterior operculum small with only 10-12 scattered setae (Fig. 3I). Female genitalia: with lateral apodemes which provide for muscle attachment and support of the genital atrium; two median cribriform plates associated with the medium accessory glands and two lateral cribriform plates on the anterior wall of the lateral diverticula, each plate cuticular and perforated by pores; spermathecae two blind, digitate projections resulting from antero-dorsal evagination of median diverticulum. Scattered cells occur in epithelium of median diverticulum (Fig. 3L). Chaetotaxy: posterior margin of anterior operculum with row of 27-30 acuminate setae, long over small genital aperture, becoming short laterally, anterior to these and

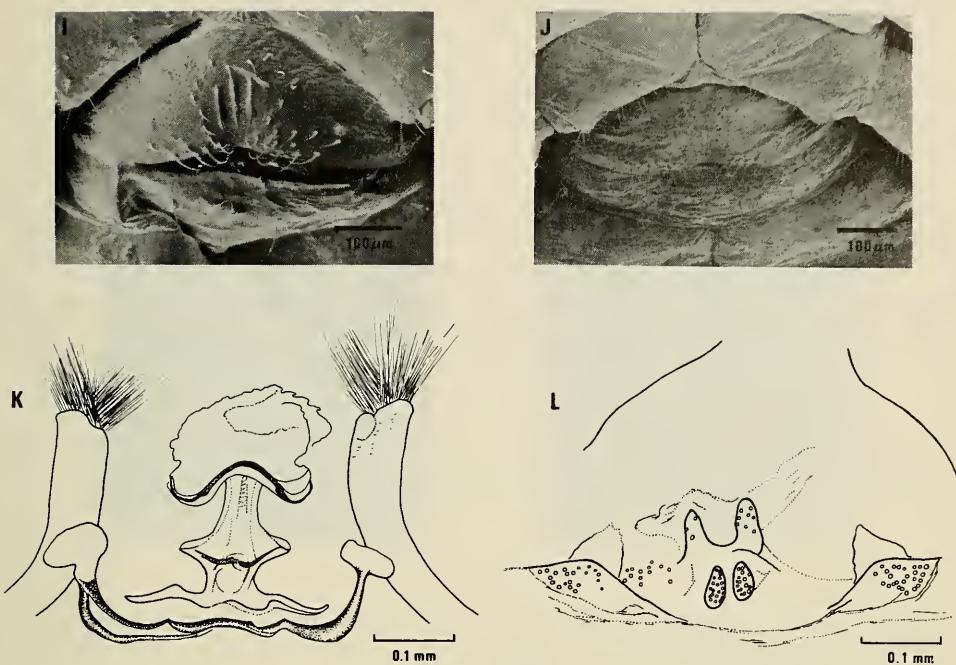


Fig. 3. *Conicochernes doyleae* sp.nov., **I** and **J**, scanning electron micrographs of genital region, external aspect, male and female paratypes respectively. **K**, male genitalia; **L**, female genitalia.

centrally situated 6-7 very long setae above which are 7-8 short setae; posterior operculum with 7-10 setae distributed centrally at random, posterior margin with 17-18 uniserrate acuminate setae (Fig. 3J). Sternites: setae short, acuminate; chaetotaxy: ♂ 0: 27-30: 12-14: 16-18: 20-23: 18-20: 18: 18: 10-12: 10: ?; ♀ 0: 30-40: 20-24: 16-18: 16-18: 20: 18: 16-18: 24-26: 28: ?, sternites 4-11 uniserrate.

**Dimensions (mm):** body length 2.70-3.28 (2.92-3.46); pedipalps: trochanter 0.36-0.43/0.27-0.34 (0.36-0.39/0.27-0.30), femur 0.77-0.90/0.27-0.30 (0.75-0.84/0.27-0.30), tibia 0.59-0.72/0.30-0.39 (0.56-0.66/0.27-0.36), chela (with pedicel) 1.08-1.30/0.34-0.43 (1.18-1.26/0.36-0.41), chela (without pedicel) 1.02-1.24/0.34-0.43 (1.08-1.17/0.36-0.41), movable finger length 0.46-0.54 (0.43-0.56); chelicera 0.18-0.23/0.10-0.14 (0.21-0.25/0.11-0.14) movable finger length 0.12-0.16 (0.12-0.18); carapace 0.84-0.98/0.75-0.89 (0.86-1.03/0.84-0.98); cucullus length 0.14-0.19 (0.16-0.22) ocular breadth 0.56-0.64 (0.56-0.64); leg I: coxa width 0.30-0.36 (0.32-0.36), trochanter 0.13-0.16/0.11-0.16 (0.14-0.16/0.11-0.16), basifemur 0.16-0.22/0.14-0.18 (0.16-0.25/0.14-0.17), telofemur 0.22-0.33/0.13-0.16 (0.22-0.33/0.12-0.16), tibia 0.16-0.28/0.10-0.14 (0.22-0.28/0.10-0.14), tarsus 0.16-0.22/0.08-0.10 (0.16-0.22/0.07-0.08); leg 4: coxa width 0.28-0.33 (0.30-0.36), trochanter 0.18-0.25/0.14-0.16 (0.19-0.28/0.14-0.19), basifemur 0.25-0.30/0.16-0.25 (0.19-0.28/0.16-0.22), telofemur 0.39-0.50/0.19-0.24 (0.41-0.50/0.21-0.28), tibia 0.28-0.42/0.12-0.14 (0.28-0.40/0.11-0.15), tarsus 0.22-0.28/0.08-0.10 (0.16-0.20/0.07-0.11).

Tritonymph. L/W ratio: pedipalpal trochanter 1.36-1.73, femur 2.12-3.21, tibia 1.56-2.05, chela (with pedicel) 3.00-3.65, chela (without pedicel) 2.78-3.30 x longer than broad. Fixed finger with 7 trichobothria, movable finger with 3 trichobothria, *sb* and *ist* absent; serrula exterior of chelicera with 13 broad lamellae, distal and proximal lamellae long and narrow. Carapace: posterior margin angulate, 6: 10: (50-60) setae, 1.04-1.20 x

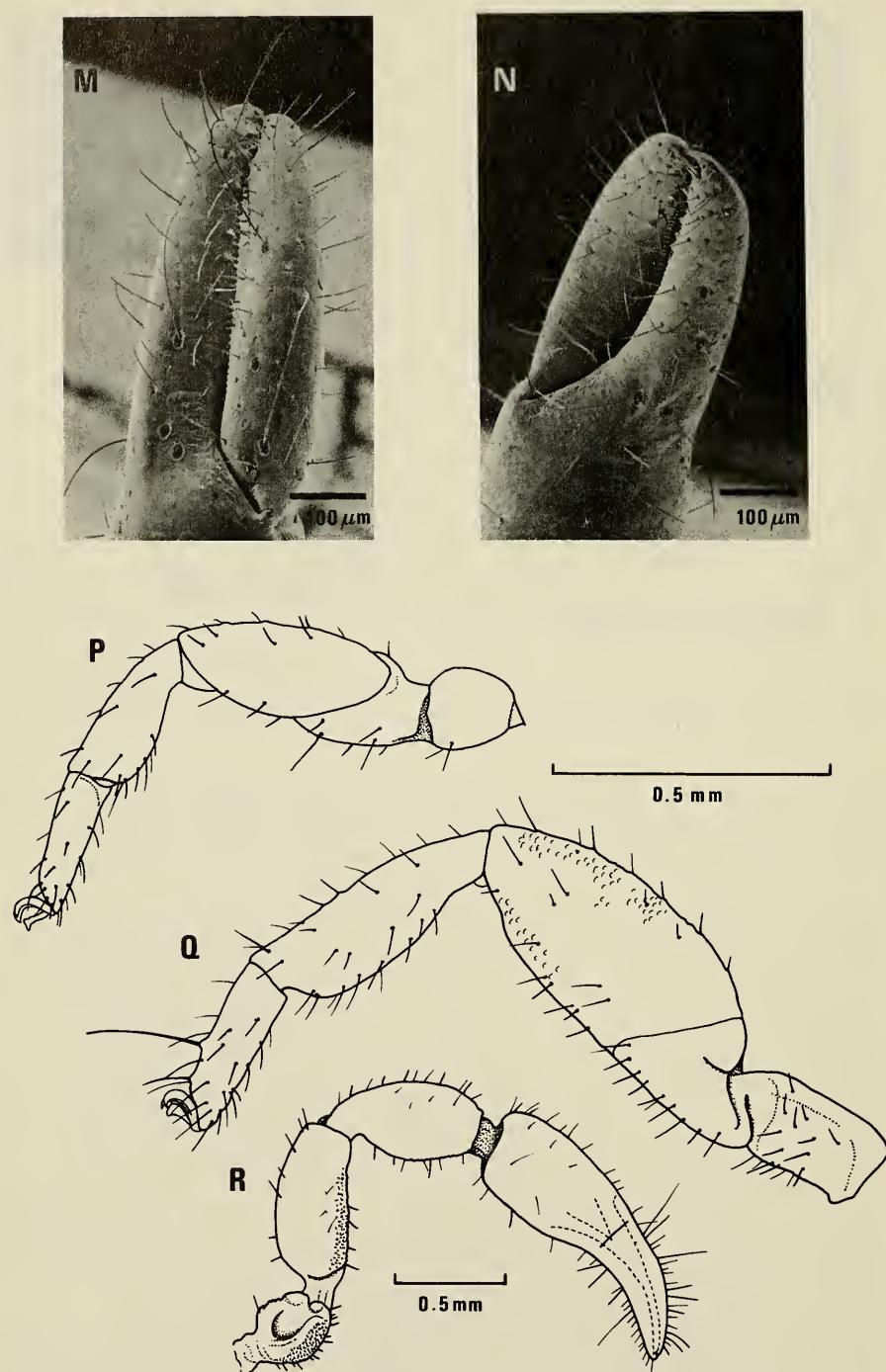


Fig. 4. *Conicochernes doyleae* sp. nov., female paratypes: **M** and **N**, scanning electron micrographs of right chela, lateral, external and internal aspects respectively showing position of trichobothria; **P**, 1st left leg; **Q**, 4th left leg; **R**, left pedipalp, dorsal.

longer than broad. Tergal chaetotaxy: 10-12: 12: 12: 12: 13-14: 11-12: 14-15: 14-15: 12: 10-12: 12-14: 2. Sternal chaetotaxy: 0: 6-8: 8-10: 12: 14-16: 16: 16-18: 10-14: 12-18: 10-12: 12-14: 2. Coxal chaetotaxy: 0: 3: 4: 0: 2: 7: 0: 2: 6-7: 0: 2: 10-13. Monotarsate.

Dimensions (mm): body length 2.38-2.88; pedipalps: trochanter 0.26-0.33/0.19-0.22, femur 0.47-0.61/0.19-0.25, tibia 0.39-0.47/0.19-0.25, chela (with pedicel) 0.84-0.95/0.25-0.30, chela (without pedicel) 0.78-0.86/0.25-0.30, movable finger length 0.35-0.45; carapace 0.61-0.70/0.56-0.64.

Deutonymph. L/W ratio: pedipalpal trochanter 1.35-1.72, femur 2.14-2.57, tibia 1.56-2.00, chela (with pedicel) 3.19-4.06, chela (without pedicel) 2.76-3.68 x longer than broad. Fixed finger with 6 trichobothria, movable finger with 2 trichobothria, *st*, *sb*, *ist*, *esb* absent, serrula exterior of chelicera with 11 blunt lamellae, distal and proximal lamellae long and narrow. Carapace 6: 8: (30-40) setae, 1.00-1.07 x longer than broad. Tergal chaetotaxy: 8: 8: 8:-10-12: 12: 10: 10-12: 12: 12: 10-12: 8: 2. Sternal chaetotaxy: 0: 0: 0: 4-6: 6-10: 7: 8-10: 9-11: 10-12: 9-10: 10: 1. Coxal chaetotaxy: 0: 2-3: 6-7, 0: 3: 5-6, 0: 2: 5, 0: 3: 5.

Dimensions (mm): body length 1.48-2.24; pedipalps: trochanter 0.19-0.25/0.11-0.16, femur 0.30-0.42/0.14-0.19, tibia 0.25-0.33/0.12-0.19, chela (with pedicel) 0.61-0.73/0.16-0.22, chela (without pedicel) 0.56-0.65/0.16-0.22, movable finger length 0.25-0.31; carapace 0.39-0.47/0.37-0.45.

Protonymph. L/W ratio: pedipalpal trochanter 1.20-1.33, femur 1.75-2.50, tibia 1.58-1.91, chela (with pedicel) 3.14-4.30, chela (without pedicel) 3.00-3.90 x longer than broad. Fixed finger with 3 trichobothria, *t*, *et*, *eb*, *isb* present. Serrula exterior of chelicera with 10 broad lamellae, distal and proximal lamellae long and narrow. Carapace with 6: 7-8: (25-30) setae, 1.04-1.10 x longer than broad. Tergal chaetotaxy: 6: 8: 6: 6: 6: 8: 6-8: 8: 8: 6: 4: 2. Sternal chaetotaxy: 0: 2-3: 4: 4-5: 5-6: 6-8: 6-8: 6-8: 8: 6: 1-2. Coxal chaetotaxy: 0: 2: 4: 0: 2: 3: 0: 2: 2-3, 0: 2: 3.

Dimensions (mm): body length 1.10-1.45; pedipalps: trochanter 0.12-0.16/0.10-0.13, femur 0.19-0.28/0.10-0.12, tibia 0.18-0.23/0.10-0.12, chela (with pedicel) 0.43-0.54/0.12-0.14, chela (without pedicel) 0.39-0.48/0.12-0.14, movable finger length 0.18-0.21; carapace 0.28-0.48/0.26-0.43.

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